

REMARKS

Applicants thank the Examiner for total consideration given the present application. Claims 1-18 are currently pending of which claims 1 and 5 are independent. Claims 1 and 5 have been amended through this Reply. Applicants respectfully request reconsideration of the rejected claims in light of the amendment and remarks presented herein, and earnestly seek timely allowance of all pending claims.

35 U.S.C. § 102 REJECTION – Maier-Laxhuber

Claims 1, 2, and 5 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Maier-Laxhuber et al. (USPN 5,585,145) (“Maier-Laxhuber”). Applicants respectfully traverse this rejection.

For a Section 102 rejection to be proper, the cited reference must teach or suggest each and every claimed element. *See M.P.E.P. 2131; M.P.E.P. 706.02.* Thus, if the cited reference fails to teach or suggest one or more elements, then the rejection is improper and must be withdrawn.

In this instance, Maier-Laxhuber fails to teach or suggest each and every claimed element. For example, independent claims 1 and 5 recite, *inter alia*, “wherein linear thermal expansion coefficient of the adsorbent layer is substantially equivalent to linear thermal expansion coefficient of the fins.” *Emphasis added.*

It is respectfully submitted that Maier-Laxhuber fails to teach or suggest the above-identified feature of amended claims 1 and 5.

Maier-Laxhuber merely discloses a conventional method for providing an adsorbent bed coating layer on a lamella (fin) heat exchanger to attain a suitable thickness for this adsorbent bed coating layer so that the adsorbent bed material adheres to the heat exchanger during very rapid temperature increases and decreases. The adsorbent bed coating for use on this lamella heat exchanger may include a solid adsorbent material having a grain diameter of between 1 and

50 μm and a finely dispersed dehardened binder agent. The binder agent is less than 50% of the solid adsorbent material. In addition, Maier-Laxhuber discloses that the solid adsorbent material is preferably a zeolite and the finely dispersed dehardened binder agent is preferably a high temperature adhesive. (*See col. 2, lines 50-57.*)

In FIG. 1, Maier-Laxhuber illustrates a cross-sectional view of a pipe-lamella-heat exchanger with pipes 1 and 2 having lamellas 3 mounted thereon. The lamellas 3 may preferably be made of aluminum. Maier-Laxhuber discloses that the pipes 1, 2 and lamellas 3 are coated with a zeolite layer 4 wherein flow conduits 5 are located between the coated lamellas 3 for the unobstructed access of operating medium vapor. The coated pipe-lamella-heat exchanger is built into a housing 6, whose exterior wall 7 is supported by a front face of the lamella 3. Maier-Laxhuber further discloses that the lamellas 3 have a fiber fleece 8 bonded thereto before the lamellas are coated with the zeolite layer 4. (*See col. 3, lines 32-43.*)

Maier-Laxhuber is distinguished from the claimed invention in that Maier-Laxhuber does not teach that the linear thermal expansion coefficient of the zeolite layer 4 is substantially equivalent to the linear thermal expansion coefficient of the lamellas 3. Although Maier-Laxhuber suggests the use of high temperature adhesives so that the adhesive bed coating may be utilized under relatively high thermal stresses, Maier-Laxhuber fails to provide any specifics about the linear thermal expansion coefficient of this adhesive bed coating. Thus, Maier-Laxhuber cannot be relied upon to anticipate that the linear thermal expansion coefficient of the zeolite layer 4 is substantially equivalent to the linear thermal expansion coefficient of the lamellas 3.

Maier-Laxhuber merely discloses that the heat exchanger lamellas may be made from a metal that has relatively good heat conductivity. (*See col. 4, lines 24-31.*) The entire reference is completely silent on linear thermal expansion coefficient of the lamellas 3 or the zeolite layer 4. Indeed, as demonstrated above, Maier-Laxhuber is only concerned in determining a suitable thickness for the zeolite layer 4 to attain mechanical and thermal stability for this layer. It is respectfully submitted that Maier-Laxhuber fails to teach or suggest that linear thermal

expansion coefficient of the adsorbent layer (zeolite layer 4) is substantially equivalent to linear thermal expansion coefficient of the fins (lamellas 3) as recited in amended independent claims 1 and 5.

Therefore, for at least these reasons, independent claims 1 and 5 are distinguishable from Maier-Laxhuber. Claim 2 depends from claim 1. Therefore, for at least the reasons stated with respect to claim 1, claim 2 is also distinguishable from Maier-Laxhuber.

Accordingly, Applicants respectfully request that the rejection of claims 1, 2, and 5, based on Maier-Laxhuber, be withdrawn.

35 U.S.C. § 103 REJECTION – Maier-Laxhuber, Takahashi

The Examiner rejects claims 3, 4 and 6-11 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Maier-Laxhuber. Claims 12-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Maier-Laxhuber in view of Takahashi et al. (U.S. Patent No. 6,346,298)[hereinafter “Takahashi”]. Applicants respectfully traverse these rejections.

For a Section 103 rejection to be proper, a *prima facie* case of obviousness must be established. See *M.P.E.P.* 2142. One requirement to establish *prima facie* case of obviousness is that the prior art references, when combined, must teach or suggest all claim limitations. See *M.P.E.P.* 2142; *M.P.E.P.* 706.02(j). Thus, if the cited references fail to teach or suggest one or more elements, then the rejection is improper and must be withdrawn.

In this instance, it is respectfully submitted that Maier-Laxhuber, either alone or in combination with Takahashi fails to teach or suggest each and every limitation of claims 3, 4, and 6-18. Note that claims 3, 4, and 6-18 depend from claim 1, directly or indirectly. As demonstrated above, Maier-Laxhuber fails to teach or suggest “wherein linear thermal expansion coefficient of the adsorbent layer is substantially equivalent to linear thermal expansion coefficient of the fins” as recited in claim 1.

Takahashi has not been, and indeed cannot be, relied upon to correct at least this deficiency of Maier-Laxhuber. Takahashi merely discloses a flexible board comprises metal foil 1 and provided thereon a laminated polyimide-based resin layer 2 of a three-layer structure comprising a first polyimide-based resin layer 2a, a second polyimide-based resin layer 2b, and a third polyimide-based resin layer 2c, wherein the coefficient of linear thermal expansion of the first polyimide-based resin layer 2a on the side of the metal foil 1 is greater than the coefficient of linear thermal expansion of the third polyimide-based resin layer 2c and wherein the coefficient of linear thermal expansion of the third polyimide-based resin layer 2c is greater than the coefficient of linear thermal expansion of the second polyimide-based resin layer 2b. (*See col. 2, lines 38-60 and Fig. 1.*) Thus, it is respectfully submitted that Takahashi cannot be relied upon to fulfill the above-identified deficiency of Maier-Laxhuber.

Therefore, for at least the above reasons, it is submitted that claims 3, 4, and 6-18 are distinguishable from Maier-Laxhuber and Takahashi.

CONCLUSION


In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ali M. Imam Reg. No. 58,755 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

Dated: October 6, 2008

Respectfully submitted,

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